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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/997,774	11/30/2001	Tathagato Mukhopadhyay	7416/78598-PPA 6	5069

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EXAMINER

TRAN, THIEN D

ART UNIT PAPER NUMBER

2616

DATE MAILED: 05/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/997,774	Applicant(s) MUKHOPADHYAY ET AL.	
	Examiner Thien D. Tran	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 and 28-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-10, 12-25 and 28-41 is/are rejected.
- 7) ☒ Claim(s) 5 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is final due to the applicant's amendment filed on 10/03/2005.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4, 6, 7, 13-25, 28-41 are rejected under 35 U.S.C. 102(e) as being participated by Haller et al (U.S Patent No. 6,182,261).

Regarding claim 1, Haller discloses a method of decoding a sequence of packets (frames) in a communication system having a predetermined decoding time constraint per frame, col.3 lines 15-22, such method comprising:

iteratively decoding a second packet (first frame) of the sequence of frames for a time period longer than the time being decoded for a first packet (decoding the first frame for the time longer than the predetermined time constrain) col.3 lines 22-28; and

iteratively decoding the first packet (at least one other frame) of the sequence of frames being finished before the second packet finished (decoding at least one other frame for the times less than the predetermined time constraint) col.3 lines 22-28, so that an average decoding time of all decoded packets is twice the decoding speed (less than or equal predetermined time), col.9 lines 55-56.

Regarding claim 23, Haller discloses a method of decoding a sequence of frame in a communication system, such method comprising:

iteratively decoding the frames of the sequence of frames being finished different time (at a variable time rate), a first packet (at least one other frame) of the sequence of frames being finished before a second packet finished (decoding at least one other frame for the times less than the predetermined time constraint of the communication system) col.3 lines 22--28,

outputting the decoded frames of the sequence of frames to an upper stage (upper layer at a constant rate), col.9 line 25.

Regarding claims 28, 32, Haller discloses an apparatus for decoding a sequence of frames in a communication system having a predetermined decoding time constraint per frame, col.3 lines 15-22, such method comprising:

a means for iteratively decoding a second packet (first frame) of the sequence of frames for a time period longer than the time being decoded for a first packet (decoding the first frame for the time longer than the predetermined time constrain) col.3 lines 22-28; and

a means for iteratively decoding the first packet (at least one other frame) of the sequence of frames being finished before the second packet finished (decoding at least one other frame for the times less than the predetermined time constraint) col.3 lines 22-28;

a mean for storing the first packet in RAM 52 (the at least one other frame) while the second packet is decoding (the second packet is decoding for period longer than the

predetermined time constraint), col.9 lines 33-38, so that an average decoding time of all decoded packets is twice the decoding speed (less than or equal predetermined time), col.9 lines 55-56.

Regarding claim 40, Haller discloses an apparatus for decoding a sequence of frames in a communication system, such apparatus comprising:

- a means for iteratively decoding the frames of the sequence of frames being finished different time (at a variable time rate), col.3 lines 22--28,

- a means for storing the decode frames in RAM 52, col.8 line 54 and

- a means for outputting the decoded frames of the sequence of frames to an upper stage (upper layer at a constant rate), col.9 line 25, and wherein the decoded frame are outputted pursuant to a predetermined process, figure 4.

Regarding claim 41, Haller discloses a method of decoding a sequence of frame in a communication system, such method comprising:

- iteratively decoding the frames of the sequence of frames being finished different time (at a variable time rate) col.3 lines 22--28,

- outputting the decoded frames of the sequence of frames to an upper stage (upper layer at a constant rate), col.9 line 25.

Regarding claim 2, Haller discloses storing at least one frame of the sequence of packets, col.9 lines 50-55.

Regarding claim 3, Haller discloses that at least one stored frame is stored in an input storage device, figure 1.

Regarding claim 4, Haller discloses determining an input storage device filled percentage (length) for reducing input storage frame overflow, col.7 line 31.

Regarding claims 6, 29 Haller discloses checking the frames of the sequence for errors, col.9 lines 60-65.

Regarding claims 7, 30, Haller discloses selectively storing frames of the sequence of frames in RAM 54 (alternate storage device) for next second decoding (supplementary decoding), col.8 lines 45-50.

Regarding claims 12, 13, Haller discloses selectively storing the frames in an output storage device based on the error recheck, figure 1.

Regarding claims 14-16, Haller discloses that the frames are decoded by a processor having a decoding rate (speed), and the frames are checked for errors after a preselected decoding time, the decoding time based on the decoding speed, col.10 lines 55-65.

Regarding claim 17, 33, Haller discloses that a Cyclic Redundancy Check is used to check for errors, col.9 lines 60-65.

Regarding claim 18, Haller discloses that storing at least one frame of the sequence of frames in a buffer 52 or 72 (input storage device), figure 1.

Regarding claim 19, Haller discloses that terminating the decoding of frames based on the error check, col.3 lines 50-55.

Regarding claims 20, Haller discloses a maximum a posteriori method is used to decode, col.8 line 20.

Regarding claim 21, Haller discloses a soft output turbo (Viterbi) method is used to decode, col.8 lines 20-25.

Regarding claim 22, Haller discloses storing at least one decoded frame in an output storage device of buffer, figure 1.

Regarding claim 24, Haller discloses the step of storing the decoded frames, figure 1.

Regarding claims 25, 31, Haller discloses that the decoded frames of the sequence frames are stored in an output storage device, col.7 lines 10-15.

Regarding claim 34, Haller discloses that the decoder and error check are a processor, figure 1.

Regarding claim 35, Haller discloses an alternate storage device configured to store frames having detected errors, the alternate storage device coupled to the decoder, col.10 lines 50-60.

Regarding claim 36, Haller discloses a fixing the packet sequence (sequencer for resequencing frames), col.1 lines 35-40.

Regarding claim 37, Haller discloses that the sequencer and the decoder are a processor, figure 1.

Regarding claim 38, Haller discloses an output storage device configured to store decoded frames, the output storage device coupled to the decoder, col.7 lines 10-20.

Regarding claim 39, Haller discloses that the decoder is a processor, col.3 lines 10-20.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8, 9, 10, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haller et al (U.S Patent No. 6,182,261) in the view of Davis et al (U.S 6,781,971).

Regarding claims 8, 12, Haller discloses limitations of the base claims. Haller does not disclose the step of supplementary decoding the stored frames out of sequence. However, Davis discloses a buffer used for storing out of sequence frames, col.16 line 34. Therefore, it would have been obvious to one having ordinary skill in the art to have the feature of supplementary decoding the stored frames out of sequence to the system of Haller so that the out of sequence frames can be resequenced properly.

Regarding claims 9, 10, Haller discloses limitations of the base claims. Haller does not disclose resequencing the stored frames based on the step of error recheck. David discloses checking and resequencing the out of sequence frames in the storing buffer, col.17 lines 4-25. Therefore, it would have been obvious to one having ordinary skill in the art to have the feature of resequencing the stored frames based on the step of error recheck so that a receiver is able to receive correct data sending from a transmitter.

Allowable Subject Matter

6. Claims 5 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. Claim 26 is allowed.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

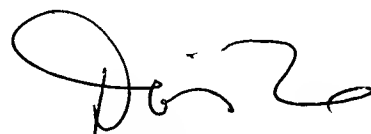
9. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Thien Tran whose telephone number is (571) 272-3156. The examiner can normally be reached on Monday-Friday from 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To, can be reached on (571) 272-7629. Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197.

Patent Examiner

Thien Tran



DORIS H. TO
SUPERVISORY PATENT EXAMINER
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